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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/671,358

09/25/2003

David Callum Johnson

ABR.P.22

7092

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02/03/2010

EXAMINER

TORRES WILLIAMS, MELANIE

ART UNIT

PAPER NUMBER

3657

MAIL DATE

DELIVERY MODE

02/03/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/671,358	Applicant(s) JOHNSON, DAVID CALLUM	
	Examiner MELANIE TORRES	Art Unit 3657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-7,9,15 and 16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-7,9,15 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bommier et al. ('746) in view of Olcott or Johnson.

Bommier et al. teaches an aircraft brake heat pack brake disc comprising an annular core layer having an outer perimeter and a face portion and an annular wear layer for frictional engagement with an adjacent brake disc, the annular wear layer attached to and extending across the face portion, wherein the core layer is a C-C composite article and wear layer is a C-C composite article and has a density lower than the core layer. (Fig. 2,5, Column 5, lines 9-54) Bommier et al. does not teach wherein the core layer is impregnated with a refractory carbide. Olcott and Johnson teach a C-C composite article impregnated with refractory carbide. It would have been obvious to one of ordinary skill in the art at the time the invention was made to impregnate a C-C wear layer with refractory carbide to improve the adhesion characteristics of wear layers and to provide improved heat sink capabilities for use in making friction materials. (See Johnson, Abstract and Olcott, Column.2, lines 45-66)

Art Unit: 3657

3. Claims 2, 6, 7, 9, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bommier et al. ('746) in view of Olcott or Johnson as applied above in view of Purdy (022) or Dietrich et al (525).

It would have been obvious at the time the invention was made to select the density of the core to wear layer in each of the principal references to be with the core density 1.85 gcm⁻³ to 2.95 gcm⁻³ and the wear layer(s) 1.85 gcm⁻³ or lower as taught by each of the secondary references to reduce weight and by routine experimentation which leads to optimum ranges without sacrificing the brakes ability to operate within acceptable wear frames and weight and heat concerns. It would have been obvious at the time the invention was made to modify the prior art to select the core layer to have a greater density than the wear layer with the specific ranges taught by Purdy or Dietrich et al in order to reduce costs and it would have been obvious to the artisan in the art to manipulate the ratios of density, lengths, sizes, etc., as taught by the secondary references and, in the alternative, to select the specific ranges through routine trial and error during routine experimentation to select the optimum ranges to arrive at the best and most cost effective solution to promote strength, good wear capabilities, good heat reduction and weight concerns.

Further, re claims 6 and 15, Olcott and Johnson teach a C-C composite article impregnated with a refractory carbide. It would have been obvious to one of ordinary skill in the art at the time the invention was made to impregnate a C-C wear layer with refractory carbide to improve the adhesion characteristics of wear layers and to provided improved heat sink capabilities for use in making friction materials. (Column 2, lines 45-66)

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELANIE TORRES whose telephone number is (571)272-7127. The examiner can normally be reached on Monday (6AM - 4:30PM), and Tuesday (6AM-12PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on 571-272-3600. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MT
February 1, 2010

/MELANIE TORRES/
Primary Examiner, Art Unit 3657